

In the claims

Claims 1-19 (canceled)

20. (canceled)

21. (currently amended): A process to produce a purified carboxylic acid composition comprising:

(a) oxidizing an aromatic feed stock in a primary oxidation zone to form a crude carboxylic acid slurry composition; wherein said crude carboxylic acid slurry composition comprises at least one carboxylic acid; and wherein there is less than 5% by weight terephthalic acid and isophthalic acid in said crude carboxylic acid slurry composition;

(b) removing in a solid-liquid displacement zone impurities from said crude carboxylic acid slurry composition to form a slurry composition; and wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone;

(c) oxidizing said slurry composition in a staged oxidation zone to form a staged oxidation composition; wherein said oxidizing is conducted at an oxidizing temperature between about 190°C to about 280°C; wherein said oxidizing temperature in said staged oxidation zone is higher than the oxidizing temperature in said primary oxidation zone;

(d) crystallizing said staged oxidation composition in a crystallization zone to form a crystallized composition;

(e) cooling said crystallized composition in a cooling zone to form a cooled purified carboxylic acid slurry composition; and

- (f) filtering and optionally drying said cooled purified carboxylic slurry composition in a filtration and drying zone to produce said purified carboxylic acid composition.
22. (currently amended): The process according to claim 20 or 21 further comprising decolorizing in a reactor zone said purified carboxylic acid slurry composition or a carboxylic acid that has been esterified.
23. (currently amended): The process according to claim 22 wherein said decolorizing is accomplished by reacting said crude carboxylic acid slurry composition with hydrogen in the presence of a hydrogenation catalyst in said reactor zone to produce a decolorized carboxylic acid composition.
24. (currently amended): The process according to claim 20 or 21 wherein said solid-liquid displacement zone comprises a solid-liquid separator that is operated at a temperature between about 50°C to about 200°C.
25. (currently amended): The process according to claim 20 or 21 wherein said purified carboxylic acid slurry composition has a b^* of less than about 4.5.
26. (currently amended): The process according to claim 21 wherein said oxidizing in said primary oxidation zone is conducted in the presence of a catalyst that comprises cobalt, manganese and bromine compounds.
27. (currently amended): The process according to claim 26 wherein the cobalt and manganese combined is present in concentrations of about 1050 ppm to about 2700 ppm by weight in the crude carboxylic acid slurry composition and the bromine can be in concentrations of about 1000 ppm to about 2500 ppm by weight in the crude carboxylic acid slurry composition.
28. (canceled)

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29. (canceled)

30. (canceled)

31. (canceled)

32. (currently amended): A process to produce a purified carboxylic acid composition comprising:

(a) oxidizing an aromatic feed stock in a primary oxidation zone to form a crude carboxylic acid slurry composition; wherein said crude carboxylic acid slurry composition comprises at least one carboxylic acid; wherein said oxidizing is conducted at a temperature between about 120°C to about 200°C; and wherein there is less than 5% by weight terephthalic acid and isophthalic acid in said crude carboxylic acid slurry composition;

(b) removing in a solid-liquid displacement zone impurities from said crude carboxylic acid slurry composition to form a slurry composition; and wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone;

(c) oxidizing said slurry composition in a staged oxidation zone to form a staged oxidation composition; wherein said oxidizing is conducted at a temperature between about 190°C to about 280°C; wherein said oxidizing temperature in said staged oxidation zone is higher than the oxidizing temperature in said primary oxidation zone;

(d) crystallizing said staged oxidation composition in a crystallization zone to form a crystallized composition;

- (e) cooling said crystallized composition in a cooling zone to form a cooled purified carboxylic acid slurry composition; and
 - (f) filtering and optionally drying said cooled purified carboxylic acid slurry in a filtration and drying zone to produce said purified carboxylic acid composition.
33. (previously presented): The process according to claim 32 further comprising decolorizing in a reactor zone said purified carboxylic acid slurry composition or a carboxylic acid that has been esterified.
34. (previously presented): The process according to claim 33 wherein said decolorizing is accomplished by reacting said crude carboxylic acid slurry composition with hydrogen in the presence of a hydrogenation catalyst in said reactor zone to produce a decolorized carboxylic acid composition.
35. (previously presented): The process according to claim 32 wherein said solid-liquid displacement zone comprises a solid-liquid separator that is operated at a temperature between about 50°C to about 200°C.
36. (previously presented): The process according to claim 32 wherein said purified carboxylic acid slurry composition has a b^* of less than about 4.5.
37. (previously presented): The process according to claim 32 wherein said oxidizing in said primary oxidation zone is conducted in the presence of a catalyst that comprises cobalt, manganese and bromine compounds.
38. (previously presented): The process according to claim 37 wherein the cobalt and manganese combined is present in concentrations of about 1050 ppm to about 2700 ppm by weight in the crude carboxylic acid slurry composition and the bromine can be in concentrations of about 1000 ppm to about 2500 ppm by weight in the crude carboxylic acid slurry composition.